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ABSTRACT

Since the precise nature of the effects of notetaking encoding has not been clearly specified, a study involving 111 suburban seventh graders (southeastern Idaho) explored the differential effects of traditional notetaking and of episodic organizers (a type of semantic web or map) on the encoding of complex narrative passages. Subjects were assigned to one of four groups and, after reading the experimental passage, were instructed to perform one of four tasks: construct an episodic organizer, study a provided episodic organizer, take traditional notes, or reread the passage. The next day they were asked to provide a written recall of the story. The two active notetaking methods enhanced recall of high-importance story elements: notetaking through a selective attention effect and episodic organizer construction through a reconstructive effect. The results confirm those of previous experiments with regard to the benefit of taking notes when reading, provide additional support for the encoding view of the function of notetaking, and reveal a positive encoding effect for the completion of an episodic organizer when reading complex narrative passages. These results are contrary to other research findings that support the position that review of notes is more important than is the process of recording them. (Tables of figures and a sample episodic organizer are appended.) (LLZ)

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Comparison of the Effects of Episodic Organizers and Traditional Notetaking on Story Recall

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Final Report

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ABSTRACT

The effects of teacher provided and student generated episodic-organizers were compared to the effects of traditional notetaking on seventh-grade students' recall of a complex short-story. Completion of an episodic-organizer and active notetaking after reading the passage both enhanced free recall performance when contrasted with study of an episodic-organizer or simple rereading. The two active notetaking methods did not differ in type or amount of noted information and both methods enhanced recall of high-importance story elements. Traditional notetaking was shown to facilitate learning through increased recall of noted story-elements (a selective attention effect). Student generated episodic-organizers, on the other hand, improved free-recall by enhancing non-note recall (a reconstructive effect). Contrary to previous investigations, note-having in the form of an episodic organizer was not found increase recall performance.

Comparison of the Effects of Episodic Organizers and Traditional Notetaking on Story Recall

The present investigation is an attempt to explore possible differential effects of traditional notetaking and episodic organizers on adolescents' encoding of complex narrative passages. Episodic organizers are a type of semantic web or map that have been suggested as an alternative to linear notetaking (Clelland, 1981; Freedman & Reynolds, 1980; Armbruster & Anderson, 1982; Pehrsson and Robinson, 1985). Webs and maps are notetaking procedures which involve representing ideas from texts in a graphic diagram. Because episodic organizers require the reader to map the connections among idea-elements presented in the passage, they may engender a "deeper" semantic encoding of the story-elements than traditional linear notes.

Notes have long been advocated as a means for enhancing the coding and retention of information. The viewpoint that notetaking <u>per se</u> facilitates learning has been termed the encoding effect (DiVesta & Gray, 1972; Rickards & Friedman, 1978). This view suggests that the mere act of taking notes without any opportunity to review the notes will enhance performance by increasing the likelihood that the material to-be-learned will be meaningfully coded and stored during input. Experiments (see Ladas, 1980; Kiewra, 1985 for reviews) have generally shown that groups which take notes are superior in

passage recall to groups which do not take notes, thus providing verification for the encoding hypothesis. Despite the support for notetaking, many studies have failed to find positive results (see Kiewra, 1985 for a recent review).

One reason may be that different encoding processes are likely to produce different learning outcomes, not just more learning (Cook & Mayer, 1983; Spiro, 1980). This possibility was confirmed in a study conducted by Pepper and Mayer (1978) using college students. They found that taking notes encouraged readers to assimilate new information with past experience but did not lead to an increase in overall recall. Hence, although the taking of notes has been demonstrated to have facilitative effects on encoding, the precise nature of the effects have not been clearly specified, and may very well depend on the type and quality of the notes taken.

Basically, there are two ways readers can elect to take notes: (1) they can copy notes directly from the text, or (2) they can use notes to engage in a more elaborated processing of the material. In the first instance, notetaking may increase the reader's attention toward certain information in the text and increase direct acquisition of that information, adding it to the reader's long-term memory in a verbatim form (Cook & Mayer, 1983). Under these circumstances, the main effect of note-taking should be to improve retention of the noted information. In the second view, notetaking is seen as a constructive process, one

that implies reorganization of the ideas that have been selected into a coherent structure, and involves both accessing relevant knowledge schemes and mapping new ideas onto those schemes. If learners use notetaking to build coherent structures, it should show up in both recall of noted ideas and increased recall of information associated with the ideas in their notes. Rickards & Friedman (1978) have termed this the reconstructive effect. It suggests that readers, who construct a meaningful retrieval structure, will be more efficient at storing details that fit into the structure and, thus, be better able to reconstruct information not directly noted. This type of encoding may also affect inferences and integration of information within existing prior knowledge schemes.

Support for the elaborative processing effects of notes has occured in the few studies that looked at the organizational effects of notes on recall. In all cases (Doctorow, et. al, 1978; Bretzing & Kulhavy, 1979; Bretzing & Kulhavy,1981; Glover, et. al.,1981; Glover, et. al., 1982; Shimmerlik & Nolan, 1976), notetaking which involved paraphrasing, summarizing, elaboration or reorganization was found to be more effective than verbatim notes. However, in these experiments the students were induced to engage in "deeper processing" according to their assigned conditions in the experiments. Other studies (Brown & Smiley, 1978; Hidi & Klaiman, 1983) suggest that left to their own devices younger students tend to copy notes directly from the

text. Thus, the qualitative effects of notetaking may very well rest upon the propensity of individual readers to use notes to engage in "deeper" processing. One goal of the present study is to investigate the type of encoding process initiated when young adolescent readers are asked to read a complex narrative passage and take notes. Without training or the requirement to take notes in a prescribed fashion, it is predicted that the majority of the students will simply copy information directly from the passage, and therefore, engage in verbatim rather than more elaborated processing of the story-elements.

Semantic webs or maps, on the other hand, should foster a deeper processing or reorganization of the text and thus decrease verbatim notetaking. To construct a web (also known as a map, network or organizer), the reader must organize and reorganize ideas abstracted from the text-passage and then display them as clusters of related ideas. The major ideas are drawn in circles, rectangles, or other shapes, then lines are used to connect the ideas together in a spatial arrangement. Hence, unlike traditional linear-notes, a semantic web has both a verbal and a graphic component, and displays the interrelationship of concepts recorded in the notes. Several studies (Armbruster & Anderson, 1980; Dansereau et. al., 1979; Holly et. al., 1979) have investigated the effects of semantic webs or maps on students acquisition of expository text material. Results of all the studies indicate students who constructed maps recalled more

information than students in the other study conditions.

Pehrsson & Robinson (1985) point out that a story, due to its episodic qualities, can also be represented by a network or map, a structure which they refer to as an episodic organizer. Episodic organizers are based on and centered around actions, and resemble a flow chart depicting changes in events over time. The episodes are drawn in circles which are linked together by arrows showing the order of the major story happenings. Stories written for children usually have simple organizational structures- basically a setting, a beginning (theme or goal), a middle (plot), and an end (final resolution). The central characters and events of each episode are attached by added lines.

To date, little research has been conducted to investigate the effectiveness of episodic organizers. Reutzel (1985) studied the use of a story map as a prereading and postreading activity with average fifth grade students and found that it was superior to a Directed Reading Activity lesson. Different results were obtained by Sebesta, Calder, & Cleland (1982) when they trained remedial fifth-grade students to use a story-grammar map to take notes. Use of the story map did not improve story comprehension, in fact, the students' scores declined although not significantly. In none of the above studies, however, were the effects of mapping compared with the effects of traditional notetaking. Examination of the possible differential effects of notetaking and episodic organizers on the encoding and retention

of a complex narrative passage is the prime purpose of the present investigation. It is predicted that episodic orgainzers will have a greater facilitative effect on recall than traditional notetaking.

Notetaking Versus Note-Having

An important distinction in the investigation of techniques for improving reading comprehension has been between aids that are provided by the teacher and those that are generated by the students themselves. With regard to notes, this relates to the issue of notetaking versus note-having. So far, the research (Carter & Van Matre, 1975; Fisher & Harris, 1973; Kiewra, 1985; Rickards and Friedman, 1978) indicates that having notes to review is more important than is the recording of notes. This supports the external storage hypothesis (DiVesta & Gray, 1972) with regard to the function of notes, which specifies that the main purpose of notes is to store passage information (offen in verbatim form) for later review. Based on the note-have research, it is predicted students who review an organizer provided by the teacher after reading will perform better than students who produce their own notes. The outcome, however, may very well depend on the quality of the notes the students in the notetaking and episodic-organizer conditions are able to generate. Investigation of this issue is another major purpose of the present study.

METHODS

Subjects

The subjects for this experiment were drawn from regular seventh grade reading classes taught in a suburban junior high school in southeastern Idaho. The students were assigned by class to the treatment conditions on a randomized basis. The total number of subjects participating in the investigation was 111.

Materials

The story passage used in this study was selected from a junior high school English reader. A few alterations were made to render the passage more appropriate for this investigation. The readability of the modified passage as computed by the Fry (1978) and Dale-Chall (1948) formulas fell within the sixth grade to eighth grade reading level. The story, titled "Never Trust A Lady" (Canning, 1977), describes a locksmith named Horace, who has a mania for old, rare books. Once a year he steals jewels to pay for the books. This time however, he is caught by a pretty young lady who tricks him into opening a safe. Horace is later arrested for jewel robbery and ends up as the assistant prison librarian because no one believed his story about the young lady. The story passage is 1687 words in length.

For each sentence of the story, normative ratings of the "structural importance" (SI) were computed according to procedures outlined by Johnson (1970). This involved asking 28

college students to rate each text sentence (divided into pausal units) as to its importance to the overall meaning of the passage. The college students were assigned to one of three subgroups having the task of eliminating 1/4, 1/2, or 3/4 of the sentence units that were least important to the overall semantic content of the story. A count of the number of times a sentence unit was judged essential (retained rather than eliminated) provided the measure of its structural importance. Based on these ratings, sentence units were classified as high, medium, or low in structural importance (SI) to the meaning of the passage.

The episodic organizer used in this investigation was developed according to the design rules described by Pehrsson & Robinson (1985). Figure 1 presents the graphic representation of the provided episodic organizer used in this investigation. Additionally, some students were asked to generate their own episodic organizer using a form identical to the one presented in Figure 1 except with all the supporting information and lines removed. This partial organizer only contained the boxes for the setting, major events and conclusion.

Insert Figure 1 about here

Procedures

The experiment took place in the students regular classrooms. The students were informed that the purpose of the

activity was to examine the effectiveness of different ways to study a story. The students were also told that they would be given a test on the story the next day, however, no information was given about the precise nature of the test.

All students were given additional instructions appropriate to their assigned condition. Students in the provided organizer group were shown an example episodic organizer for the children's tale "Jack and the Bean Stock". Students in the partial organizer group were shown how to make an episodic organizer based on their memory for the tale. In both cases, the experimenter modeled the construction of telegraphic notes and the importance of the telegraphic nature of the notes to be included in the organizer was explained. Students in the notetaking group were shown how to list important notes from the same tale according to a traditional linear notetaking method.

Next, the experimental passage was handed out and the students were given 15 minutes to read the story, after which they either reread, took-notes, completed an episodic organizer or studied a provided episodic organizer for an additional 20 minutes depending on which study technique they were assigned. The following day the experimenter distributed lined notebook paper and pencils and asked the students to recall and retell in writing as much of the story as they could remember. All students completed this activity within the 45 minute class period.

Design

For convenience whole reading classes were used as experimental groups. Therefore, because the distribution of the students to the experimental treatments was not randomized, Science Research Associates (SRA) reading composite scores were used a covariate in all analyses to control for any group differences in reading ability. Table 1 presents the means and standard deviations of the SRA reading composite scores for the three treatment conditions and the control group. SRA reading composite scores refect both reading vocabulary and reading comprehension scores. The SRA scores are reported in percentiles.

Insert Table 1 about here

The effects of provided and student-generated episodic organizers on story retention were compared with the effects of notetaking after reading and rereading the story for a second time using a single factor between-subjects design with study technique (provided episodic organizer, generated episodic organizer, generated notes, or rereading) as the between-subjects factor. The multiple dependent measures derived from the students free-recall responses were the number of story units recalled at each level of structural importance (high, medium, and low). These dependent variables were analyzed using the

design described above and one-way multivariate analysis of covariance procedures. Science Research Associates (SRA) reading composite scores served as the covariate. Total story recall was examined separately using the same design and one-way analysis of covariance. Post hoc mean comparisons were made using the Newman-Keuls procedure.

Also examined was the type of information as indicated by SI ratings included in the organizers generated by the students who actively filled-in their own episodic organizer as compared to the type of information chosen by the students who took their own notes. The design was a single factor between subjects design with study technique (episodic organizers versus notetaking) as the between subjects factor. The dependent measures reflecting level of structural importance (high, medium, and low) of the information recorded in the students' notes were analyzed using the design described above and multivariate analysis of covariance procedures. The total amount of notes taken was also examined using the same design and one-way analysis of covariance procedures.

The proportion of notes actually recalled, and the proportion of total recall due to recall of notes were also compared. The design in each case was the was the same as described previously. The dependent measures were analyzed separately using one-way analysis of covariance procedures.

Finally, the number of words included in the students notes

and in the generated episodic organizers were compared using single factor analysis of covariance procedures. The purpose of this analysis was to determine whether the notes developed by students in the episodic organizer group were more telegraphic in nature than the notes written by students in the regular notetaking condition.

Scoring

The recall protocols were scored by comparing the students written statements to the original sentences (pausal units) of the story. To receive credit, a student's statement had to convey the same meaning and employ a minimum number of designated words from the story or their semantic equivalents. The notes taken by students in the active episodic organizer and notetaking conditions were scored as to which sentences in the original passage the notes referred. Ratings of structural importance were assigned to the notes based on the SI ratings given to the original sentence.

The objectivity of the scoring procedures was assessed by having an independent rater score 24 randomly-selected recall performances, six from each experimental condition. The judgements were then correlated to determine the extent to which the scoring was objective. All correlations were in the r = .92-.99 range, indicating sufficient objectivity for the purposes of this investigation.

RESULTS

Total Story Recall

Examination was made of the effects of provided episodic-organizers, student-completed episodic-organizers, notetaking, and rereading on the subsequent delayed recall of the story passage. Table 2 presents the means and standard deviations for the story units recalled and for the number of story units recalled by level of structural importance (high, medium, and low) for each of the experimental conditions. The single factor unweighted means analysis of covariance for total recall of story units revealed a significant effect for study condition, $F(3,106) = 5.24$, $p < .01$, $MS_e = 156.88$. Post hoc mean comparisons using the Newman-Keuls procedure indicated student-completed episodic-organizers ($\bar{X} = 44.40$) did not significantly enhance overall story recall when compared with active notetaking ($\bar{X} = 42.70$) but both of these active notetaking techniques significantly ($p < .05$) enhanced performance when compared to provided episodic-organizers ($\bar{X} = 33.65$) or to rereading the story ($\bar{X} = 35.37$). The latter two groups did not differ significantly.

Insert Table 2 about here

Recall by Level of Structural Importance

The single factor unweighted means multivariate analysis of

covariance for recall by level of structural importance (high, medium, and low) revealed a significant effect for study method, approximate $F(9,308) = 2.52$, $p < .01$. The unweighted means univariate analysis of covariance for recall of high SI story units was also significant, $F(3,106) = 4.41$, $p < .01$, $MSe = 40.92$. Post hoc mean comparisons demonstrated that both student-completed episodic-organizers ($\bar{X} = 26.34$) and student-generated notetaking ($\bar{X} = 25.43$) significantly ($p < .05$) enhanced recall of high SI story elements compared to rereading the story ($\bar{X} = 21.07$). In addition, the student-completed episodic-organizer group significantly ($p < .05$) outperformed the group who studied provided episodic-organizers ($\bar{X} = 22.00$). No other signficant differences were found among the groups.

The unweighted means analysis of covariance for recall of medium SI story units revealed a significant effect for study condition, $F(3,106) = 2.95$, $p < .05$, $MSe = 20.09$. Post hoc mean comparisons revealed the student-completed organizer group ($\bar{X} = 10.86$) exceeded the provided organizer group ($\bar{X} = 7.87$) in recall of mid-level SI story units. No other differences were found to reach significance.

The unweighted means analysis of covariance for recall of low SI story units again revealed as significant effect for assigned study method, $F(3,106) = 5.52$, $p < .01$, $MSe = 13.01$. Post hoc mean comparisons showed both the student-completed episodic-organizer group ($\bar{X} = 7.16$) and the notetaking group ($\bar{X} =$

6.57) recalled significantly ($p < .05$) more low-importance details than the group who studied the provided episodic-organizers ($\bar{X} = 3.74$). No other comparisons reached significance.

These results suggest active notetaking techniques are superior to studying provided notes and to rereading, supporting the encoding hypothesis with regard to the function of taking notes (DiVesta & Gray, 1973). They also indicate one effect of the more active notetaking methods is to enhance recall of the most important information. In addition, these results indicate active notetaking study methods increase retention of details compared to note-having study conditions (in the form of provided episodic-organizers), but not compared to simply rereading the story passage. The latter finding, however, is probably related to the type of notes contained in the provided organizers which in this study did not include any low-importance details.

Story-Content Noted

The number and type of story-statements included in the notes of the students who completed episodic-organizers was compared to the amount and type of story-content noted by the students who did their own notetaking. Table 3 presents the means and standard deviations for the total amount of passage information noted and for the proportion of notes taken by level of structural-importance for the two groups. The single factor analysis of covariance for amount of story-content noted revealed

no significant difference between the two groups, $F(1,51) = 3.50$, $p = .067$. To examine whether or not the pattern of notetaking varied between these two groups a subsequent multivariate analysis of covariance for the proportion of notes taken by SI level was performed. The results indicated the overall multivariate analysis was not significant, approximate F $(3,49) = 2.70$, $p = .06$. Combined, these results suggest there were no major differences between the two notetaking techniques in either the amount of story-content noted or the type (as determined by SI level) of notes taken.

Insert Table 3 about here

Number of Words in the Notes

To check the efficiency of the two notetaking methods, the episodic-organizer and notetaking groups were compared on the number of words in their notes. Table 4 presents the means and standard deviations for the amount of wording used in taking-notes. The single factor analysis of covariance for words-in-notes revealed a significant effect for notetaking method, $F(1,51) = 16.5$, $p < .01$, $MS_e = 1590.21$. The results suggest the students in the episodic-organizer group ($\overline{X} = 102.74$) used significantly ($p < .01$) fewer words in constructing their episodic-organizers than did the students who took their own notes ($\overline{X} = 147.92$). Inspection of the notes indicated that

students who took their own notes tended to copy sentences directly from the story, while students in the episodic-organizer group tended to take-notes that were more telegraphic, reducing sentences to a few key words which conveyed the same semantic content (of course, students in the episodic-organizer group also copied some story-elements directly from the passage). The provided episodic-organizers were even more efficient, conveying 28 story-elements in a total of 79 words.

Insert Table 4 About Here

Note-Recall

The single-factor analysis of covariance for proportion of notes-recalled revealed a significant effect for note-study condition, $F(1,83) = 19.98$, $p<.01$, $MS_e = .08$. Table 5 presents the means and standard deviations for the three notes conditions. Post hoc mean comparisons revealed the students who took-notes ($\overline{X} = .69$) recalled a significantly ($p<.01$) greater proportion of notes than did the students who completed an episodic-organizer ($X = .54$) or the students who studied the provided organizer ($\overline{X} = .46$). The latter two groups did not differ significantly. This implies that recall of noted information was a major factor contributing to the enhanced story recall demonstrated by the students in the notetaking group.

Insert Table 5 about here

Total-Recall Attributed to Note-Recall

The single-factor analysis of covariance for the proportion of total-recall due to note-recall revealed as significant effect for notetaking condition, $F(1,83) = 19.30$, $p < .01$), $MSe = .05$. Table 5 presents the means and standard deviations of the three note-study conditions. Post hoc mean comparisons revealed the proportion of total recall due to direct recall of noted-information was significantly less ($p < .01$) for students who composed an episodic-organizer ($\overline{X} = .25$) than for students who took their own notes ($\overline{X} = .39$) or students who studied a provided episodic-organizer ($\overline{X} = .39$). The latter two groups did not differ significantly. This indicates that the facilitative effect of the student-generated episodic-organizers was mainly due to their impact on non-note rather than note-recall.

DISCUSSION

The results of the present investigation confirm those of previous experiments (see Ladas, 1980; and Kiewra, 1985, for reviews) with regard to the benefit of taking notes when reading and they provide additional support for the encoding view of the function of notetaking (DiVesta & Gray, 1972). The results also reveal a positive encoding effect for the completion of an episodic organizer when reading complex narrative passages. This

conforms to the results of previous studies (Anderson & Armbruster, 1980; Dansereau et. al., 1979; Holly et al, 1979; Reutzel, 1985) which have found networking or mapping to have facilitative effects on passage recall. Consistent with the findings of Brown and Smiley (1978), the results also indicate that one function of active notetaking is to increase recall of high-importance information.

Although the findings do not confirm those of previous investigations (Bretzing and Kulhavy 1979, 1981; Shimmerlik and Nolan, 1976; Glover, et al., 1981, 1982) that groups who reorganize their notes invariably outperform groups which take linear or verbatim notes, they nevertheless are consistent with the view that active reorganization has a positive effect on learning. Only the episodic-organizer group, who both generated notes and organized them in episodic clusters, outperformed the group who had organized notes provided for them in recall of high-importance information. Regular linear notetaking exceeded the read-reread control group but was not superior in producing recall of high-importance information when compared to the provided episodic-organizer (organized notes) group. Thus, active reorganization of one's own notes in the form of an episodic organizer apparently influenced the manner in which the passage-ideas were encoded without in this instance producing more learning.

Differential Influences on Encoding

Evidence for the differential influence of the two notetaking conditions on encoding was provided by the data on the proportion of notes recalled and the proportion of recall due to recall of noted information. The notetaking group recalled on the average 69% of the notes they took which accounted for 39% of their free recall, while the generated episodic-organizer group recalled significantly fewer (54%) of their notes, accounting for only 25% of the story units they recalled. Yet, as previously demonstrated, total recall for both groups was not significantly different, and the differences in recall of noted information occured despite the fact that the two groups did not differ significantly in the amount or type of passage information included in their notes.

This means the facilitative effect of generating an episodic organizer was mainly due to its effect on non-note recall. Rickards and Friedman (1978) have argued that facilitation of non-note recall is evidence for a reconstructive effect produced by recall of high-importance ideas included in the reader's notes. This implies completion of an episodic organizer promoted encoding of the main elements and structure of the story, and thereby enhanced non-note recall. It appears the students built "maps" (a constructive encoding process) of the story's structure and used the maps (mentally) to reconstruct the story at the time of recall. This supports the findings of Rickards & Friedman

(1978) with regard to the reconstructve effect of notes and extends them to situations in which students did not review their actual notes prior to the free recall test.

Traditional linear notetaking, on the other hand, increased learning mainly through direct acquisition of the information that was included in the students' notes. This indicates the encoding effect of traditional notes is mostly due to selective-attention given to noted material (Mayer, 1984). Additional support for this interpretation comes from the data on the number of words included in the students notes. In the notetaking group, students used significantly more words than students who generated episodic organizers, yet the two groups were not different in the number of ideas units present in their notes. Inspection of the notes indicated students in the notetaking group tended to copy sentences directly from the story while students in the organizer group took notes in a more telegraphic fashion or in their own words. This is consistent with the research of Brown and Smiley (1978), who found that the most common strategy used by fifth and seventh graders while taking notes and outlining was a copy-delete strategy . The strategy combines choosing text elements (selective attention) and copying the elements more or less verbatim from the text (a rehearsal effect). The data from the present study suggest that students in the traditional notetaking condition followed this same strategy.

Note-Having Versus Notetaking

Surprisingly, the results do not support the external storage hypothesis with regard to the value of having notes to study (DiVesta & Gray, 1972). Passive study of an episodic organizer produced 46% recall of noted information, but this accounted for the same percentage of total recall (39%) as notetaking. This suggests studying provided notes encouraged rehearsal (rote learning) of the noted information. However, note-having did not yield as high a percentage of note recall as active notetaking and, as a consequence, study of the notes in this manner did not increase overall recall when compared with rereading the passage. This finding is contrary to much of the research on notetaking versus note-having (Carter & Van Matre, 1975; Fisher & Harris, 1973; Rickards and Friedman, 1978) which supports the position that review of notes (the external storage function) is more important than is the process of recording them (the encoding function).

One reason why active student notetaking turned out to be superior to note-having in this instance may be related to the unusual form of the provided episodic-organizers. The webbed structure was probably more difficult for the students to follow than the linear-outline pattern of traditional provided-notes. Hence, although webbing was demonstrated to be a beneficial way for students to structure their own notes, it does not appear to be an effective means to provide information to others not directly involved in the web's construction.

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Table 1

Means and Standard Deviations for Composite SRA Scores by Group

	n	Mean	SD
Provided EO	33	80.48	16.30
Completed EO	31	79.65	19.04
Notetaking	23	82.30	14.31
Reread Control	24	73.17	22.32

Table 2

Means and standard deviations for the story units recalled and for the number of story units recalled by SI level

	n	Adjusted Mean	Mean	SD
High SI				
Provided EO	33	22.00	22.30	5.79
Completed EO	31	26.34	26.40	7.99
Notetaking	23	25.43	26.08	7.58
Reread Control	24	21.07	19.96	7.82
Medium SI				
Provided EO	33	7.87	8.03	3.52
Completed EO	31	10.86	10.93	5.72
Notetaking	23	10.65	11.00	5.61
Reread Control	24	9.17	8.58	4.30
Low SI				
Provided EO	33	3.74	3.82	2.80
Completed EO	31	7.15	7.19	4.48
Notetaking	23	6.57	6.74	4.29
Reread Control	24	5.16	4.88	3.01
Total				
Provided EO	33	33.65	34.15	10.06
Completed EO	31	44.40	44.61	16.83
Notetaking	23	42.70	43.83	15.20
Reread Control	24	35.37	33.33	13.25

Table 3

Means and standard deviations for the number of notes, the number of notes by SI level

	n	Adjusted Mean	Mean	SD
High SI Notes				
Completed SO	31	11.77	11.64	3.74
Notetaking	23	15.52	15.65	6.36
Medium SI Notes				
Completed SO	31	3.90	3.84	1.73
Notetaking	23	5.59	5.65	5.61
Low SI Notes				
Completed SO	31	5.00	5.03	2.87
Notetaking	23	5.64	4.61	3.95
Total				
Completed SO	31	20.62	20.52	5.26
Notetaking	23	24.30	23.78	8.47

Table 4

Means and Standard Deviations for the Number of Words included in the notes

	n	Adjusted Mean	Mean	SD
Completed EO	31	102.74	102.03	35.20
Notetaking	23	147.92	148.47	45.34

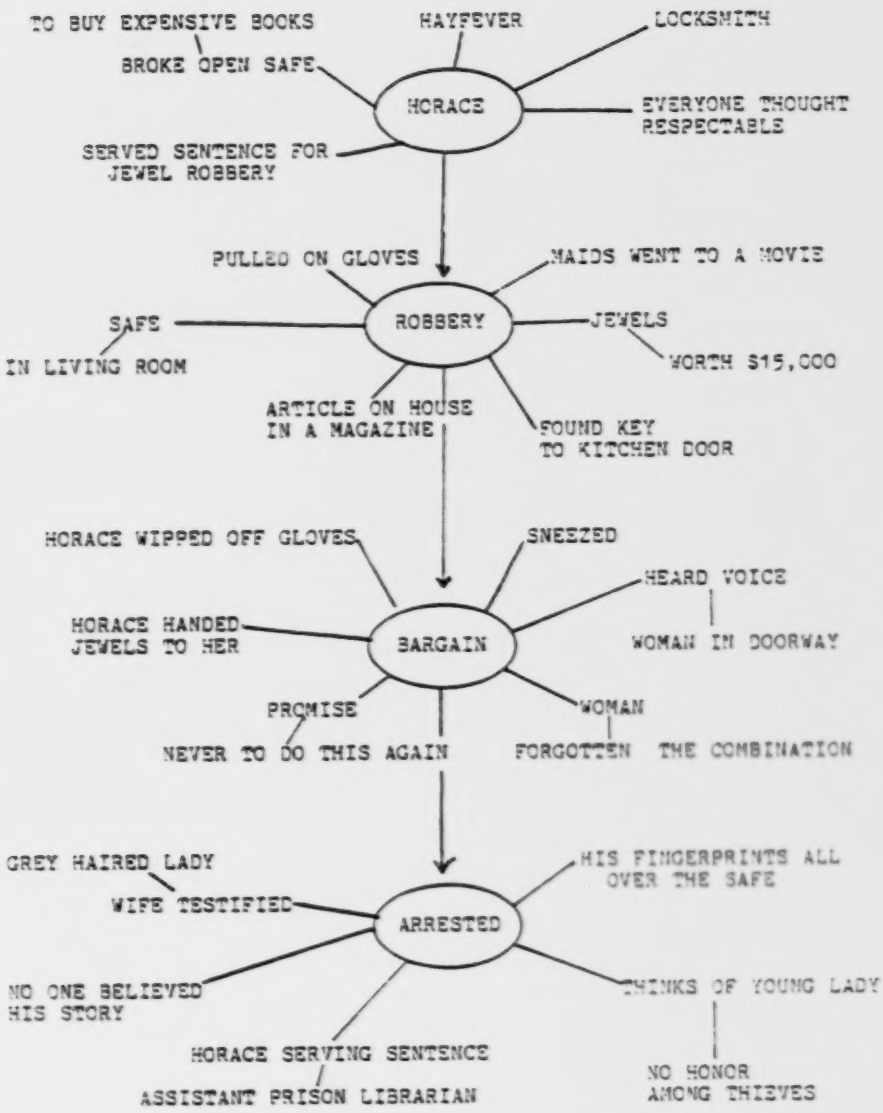
Table 5

Adjusted Means and Standard Deviations for the Proportion of Notes Recalled and the Proportion of Recall Attributed to Note-Recall

		Note-Recall		Note-Recall/Total-Recall	
	n	Mean	SD	Mean	SD
Provided EO	33	.46	.10	.39	.09
Completed EO	31	.54	.18	.25	.08
Notetaking	23	.69	.14	.39	.15

FIGURE CAPTIONS

Figure 1. Provided episodic-organizer for "Never Trust A Lady" by Victor Canning.


TO BUY EXPENSIVE BOOKS
BROKE OPEN SAFE
HAYFEVER
LOCKSMITH
HORACE
EVERYONE THOUGHT RESPECTABLE
SERVED SENTENCE FOR JEWEL ROBBERY
PULLED ON GLOVES
MAIDS WENT TO A MOVIE
SAFE
IN LIVING ROOM
ROBBERY
JEWELS
WORTH $15,000
ARTICLE ON HOUSE IN A MAGAZINE
FOUND KEY TO KITCHEN DOOR
HORACE WIPPED OFF GLOVES
SNEEZED
HEARD VOICE
HORACE HANDED JEWELS TO HER
BARGAIN
WOMAN IN DOORWAY
PROMISE
NEVER TO DO THIS AGAIN
WOMAN
FORGOTTEN THE COMBINATION
GREY HAIRED LADY
WIFE TESTIFIED
HIS FINGERPRINTS ALL OVER THE SAFE
ARRESTED
NO ONE BELIEVED HIS STORY
THINKS OF YOUNG LADY
HORACE SERVING SENTENCE
ASSISTANT PRISON LIBRARIAN
NO HONOR AMONG THIEVES